Small Business Innovation Research/Small Business Tech Transfer

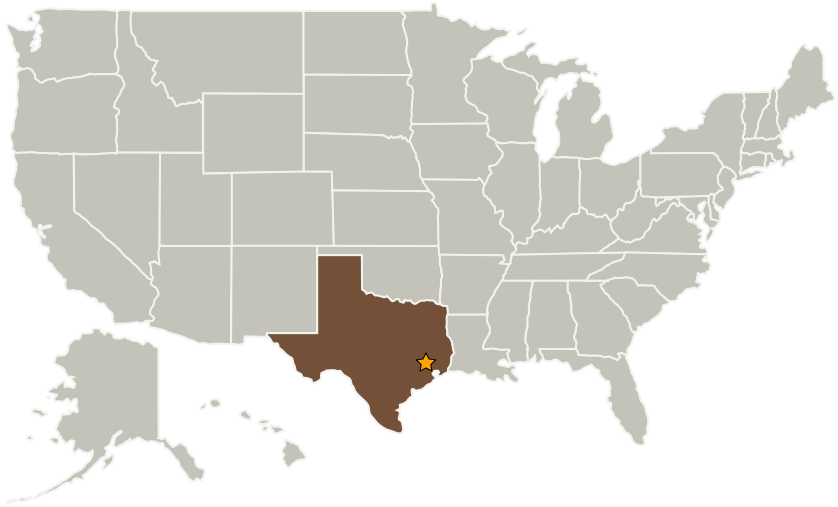
Investigation of Virtual Digital Human and Robotic Device Technology Merger Complimented by Haptics and Autostereoscopic Displays, Phase II

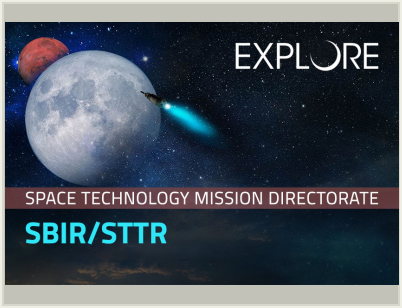
Completed Technology Project (2005 - 2007)

Project Introduction

As expected, the STTR Phase I investigation confirmed that the Digital Virtual Human (DVH) and Robonaut technologies can be merged, and that haptic and autostereoscopic technologies can be integrated in the robotic control systems, effectively and productively. This feasibility study verified and validated interactions of Robonaut with the DVH in operator response to and performance with haptic devices and autostereoscopic displays. Phase II will focus on developing two significant components from the Phase I effort for marketing and distribution in Phase III. The Collaborative-Virtual Environment Software Toolkit (C-VEST) will provide software developers a potent development toolkit with which to build and maintain 3D/VR applications and simulations. As a result of Phase II, the C-VEST product will be able to interface with immersive simulation (motion capture, manipulation, navigational, and advanced display) hardware not easily implemented in current commercial or academic 3D/VR software. The second product emanating from this Phase II project will be the OpticFlex full-body fiber-optic-based motion-capture system. This system will comprise a significant part of the Phase II and subsequently Phase III commercialization preparation effort.

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
★Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
HPN Software Consultant, Inc.	Supporting Organization	Industry	Houston, Texas

Primary U.S. Work Locations
Texas

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.2 Extravehicular Activity Systems
    - TX06.2.3 Informatics and Decision Support Systems